Soil Erodibility Factor (K), Soil-loss Tolerance Factor (T), Soil Erodibility Index (I) and Wind Erodibility Group (WEG)

General

Soil Erodibility Factors (K) and Soil-loss Tolerances (T) are used in an equation that predicts the amount of soil loss resulting from rainfall erosion of cropland. The soil-loss prediction procedure is useful to guide the selection of practices for soil and water conservation. The procedure is outlined and illustrated in Agricultural Handbook No. 703. Soil Erodibility Index (I) and Wind Erodibility Groups (WEG) are an expression of the stability of soil aggregates against breakdown by tillage and abrasion from wind erosion.

Soil Erodibility Factor (K)

The Soil Erodibility Factor (K), given in column one, indicates the susceptibility of a soil to sheet and rill erosion by water. Soil properties that influence erodibility by water are: (1) those that affect infiltration rate, movement of water through the soil, and water storage capacity; and (2) those that resist dispersion, splashing, abrasion, and transporting forces from rainfall and runoff. Soil properties that are most important are percent silt plus very fine sand, percent organic matter, percent sand coarser than very fine sand, structure, and permeability.

Soil-loss Tolerance Factor (T)

The Soil-loss Tolerance Factor (T), given in column two, is an estimate of the maximum annual rate of soil erosion that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons of soil loss per acre per year. Rates of 1 through 5 are used, depending upon soil properties and prior erosion.

Soil-loss tolerances were subjectively evaluated, based on the following general guides:

1. Maintenance of an adequate rooting depth for crop production.

2. Potential crop yield reduction.

3. Maintenance of water control structures affected by sedimentation.

4. Prevention of gullies.

5. Value of nutrients lost. Soil Erodibility Index (I)

The Soil Erodibility Index (I), given in column three, is the potential soil loss, in tons per acre per year; from a wide, level, unsheltered, isolated field with a bare, smooth, loose and noncrusted surface; under climatic conditions like those in the vicinity of the reference location for this county. See Section I-EROSION PREDICTION, pages 41a-41k of the Field Office Technical Guide for reference locations.

Wind Erodibility Group (WEG)

The Wind Erodibility Group (WEG), given in column four, is a grouping of soils that have similar properties affecting resistance to soil blowing. Soils are placed into wind erodibility groups on the basis of soil surface layer properties. The groups are 1, 2, 3, 4, 4L, 5, 6, 7, or 8. Refer to Section I- EROSION PREDICTION, page 36 of the Field Office Technical Guide.

The K, T, I factors and WEG for soil map units are in this section in the "Guide to Interpretive Groups" table.